Taxonomic and Nomenclatural Notes on Chinese *Silene* (Caryophyllaceae)

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ABSTRACT. A revision of the Chinese species of *Silene* L. for the forthcoming account of that genus in the *Flora of China*, Volume 6, necessitates publication of the following two new combinations, one new rank, one replacement name, and three new species: *Silene davidii* (Franchet) Oxelman & Lidén, comb. nov., *S. kialensis* (F. N. Williams) Lidén & Oxelman, comb. nov., *S. herbilegorum* (Bocquet) Lidén & Oxelman, stat. nov., *S. principis* Oxelman & Lidén, nom. nov., *S. sveae* Lidén & Oxelman, sp. nov., *S. tubulosa* Oxelman & Lidén, sp. nov., and *S. tibetica* Lidén & Oxelman, sp. nov.

Key words: Caryophyllaceae, China, *Silene*.

A revision of the Chinese species of *Silene* L. for the forthcoming account of that genus in the *Flora of China*, Volume 6 (Zhou et al., in press), necessitates publication of the following nomenclatural novelties.

Silene davidii (Franchet) Oxelman & Lidén, comb. nov. Basionym: *Lychnis davidii* Franchet, Nouv. Arch. Mus. Paris, sér. 2, 8: 204. 1885 [as "*DAVIDI*"]. *Hedona davidii* (Franchet) F. N. Williams, J. Linn. Soc., Bot. 34: 433. 1899 [as "*Davidi*"]. TYPE: China. Sichuan: "Moupine, in rupibus altissimis," Aug. 1869 (fl), *A. David s.n.* (holotype, P).

Silene kantzeensis C. L. Tang, Acta Bot. Yunnan. 2: 439. 1980. Syn. nov. *Silene caespitosa* Bureau & Franchet, J. Bot. (Morot) 5: 22. 1891, non *Silene caespitosa* Salisbury, Prodr. Stirp. Chap. Allerton, 302. 1796, nom. illeg. [≡ *Silene acaulis* L.], nec *Silene cespitosa* Steven, Mem. Soc. Imp. Naturalistes Moscou 3: 262. 1812 ["*cespitosa*" sic!]. *Melandrium caespitosum* F. N. Williams, J. Linn. Soc. Bot. 34: 431. 1899. TYPE: China. Sichuan: "au sud de Batang, au sommet d'une passe," 1890, *M. Bonvalot & Prince Henri d'Orléans s.n.* (holotype, P).

The name *Lychnis davidii* bears the earliest available epithet for this species, so the above new combination in *Silene* is required.

Silene kialensis (F. N. Williams) Lidén & Oxelman, comb. nov. Basionym: *Melandrium kialense* F. N. Williams, J. Linn. Soc., Bot. 34: 432. 1899. *Lychnis kialensis* (F. N. Williams) H. Léveillé, Cat. Ill. Alph. Pl. Seu Tchouen, 23. 1918. *Silene nepalensis* Majumdar var. *kialensis* (F. N. Williams) C. L. Tang ex C. Y. Wu, in W. T. Wang et al., Vasc. Pl. Hengduan Mount. 1: 423. 1993. TYPE: China. Sichuan: "Tongolo in the principality of Kiala," 1893, *J. A. Soulié 666* (holotype, K; isotype, P).

Melandrium kialense was not treated by Bocquet (1969) in his revision of *Silene* sect. *Physolychnis* (Bentham) Bocquet. The taxon is close to *S. nepalensis* and *S. songarica* (Fischer et al.) Bocquet, but is distinct in calyx size (10–12 mm, not 8–9 mm as in *S. nepalensis*, nor 12–15 mm as in *S. songarica*), quadrifid petal limbs with subequal lobes (not bifid or bifid with small lateral teeth as in the other two species), poorly developed petal claw auricles, and longer androgynophore (1.5–2 mm, not up to 1 mm as in the other two species). Therefore, the above new combination is required.

Silene herbilegorum (Bocquet) Lidén & Oxelman, stat. nov. Basionym: *Silene yetii* Bocquet var. *herbilegorum* Bocquet, Candollea 22: 5. 1967. TYPE: China. Sichuan: "Ta-Tsien-Lu (Ta-Chien-Lu)" [Kangding], s.d., *Pratt 550* (holotype, K; isotype, BM).

Bocquet (1969) suggested that this taxon should deserve specific rank, but felt that the material he had at hand was not enough. He also gave the type specimen as having been collected in 1890 (Bocquet, 1969: 26). We have studied the same material as Bocquet, and conclude that the morphological differences suggest that specific rank is indeed appropriate. The inflorescence has 5 to 10 flowers (1 to 5 in *S. yetii*), the calyx is markedly smaller (9–10 mm, as compared with 12–13 mm in *S. yetii*), and the petal limb is clearly quadrifid (bifid in *S. yetii*).

Silene principis Oxelman & Lidén, nom. nov. Replaced synonym: *Silene platypetala* Bureau & Franchet, J. Bot. (Morot) 5: 22. 1891, non *Silene platypetala* Otth, in de Candolle, Prodr. 1: 383. 1824. TYPE: China. Sichuan: "entre Batang et Litang, dans les petits bois humides," 21 June 1890, *M. Bonvalot & Prince Henri d'Orléans s.n.* (holotype, P).

Silene platypetala Bureau & Franchet, published in 1891, is illegitimate under Article 53.1 of the *Saint Louis Code* (Greuter et al., 2000) because it is a later homonym of *S. platypetala* Otth, which was published in 1824. Therefore, the above new name (nomen novum) is required. *Silene principis* is named after one of the original collectors, Prince Henri d'Orléans.

Silene sveae Lidén & Oxelman, sp. nov. TYPE: China. Yunnan: Dêqên Xian, 45 km N of Zhongdian between Xiao Geza and Geza, 3000 m, gravelly river bank, 16 Sep. 1993, *KGB (Kunming-Göteborg Botanisk expedition till NV Yunnan) 113b* (holotype, UPS).

Herba perennis caespitosa. Caules erecti canescenti-pilosi. Folia crassiuscula, basalia ovata, caulina lanceolata. Inflorescentia pauciflora, floribus primum nutantibus, deinde erectis, parvis. Calyx brevis cylindricus nervis non anastomosis. Petala (atro-)purpurea, auriculis conspicuis, limbis angustis bilobatis. Androgynophorum sparse pilosum, brevissimum. Stamina et styli inclusa.

Herbs perennial, 20–25 cm. Stems few, caespitose, simple, erect, grayish pubescent with short, retrorse hairs throughout. Basal leaves in a persistent rosette, ovate, ca. 3 × 1–1.5 cm, fleshy. Cauline leaves in 2 to 4 pairs, lanceolate, 1–2 cm. Cymules few, 1- to 3-flowered in a lax, irregular thyrse; pedicels very short and sharply deflexed at early anthesis, becoming strictly erect and 1–2 cm in fruit. Fruiting calyx grayish green, cylindric, ca. 7 × 4 mm, base rounded; veins dark green to dark violet, not anastomosing; teeth triangular, margin shortly ciliate, apex acute. Petals slightly exserted; claw ca. 2 mm wide at apex, with narrow, prominently forward-projecting auricles; limb dark red, narrow, ca. 2 mm, deeply bifid with entire lobes. Androgynophore very short, sparsely hairy. Stamens and styles included. Capsule shortly cylindric, subequaling fruiting calyx. Seeds gray, ca. 0.8 mm, minutely tuberculate.

Silene sveae is easily distinguished from *S. caespitella* F. N. Williams by the few and broad basal leaves, from *S. nepalensis* Majumdar by being smaller in all its parts, and from both species by the grayish and slightly fleshy habit, the overwintering leaf rosette, few-flowered inflorescence, prominent, forward-projecting petal auricles, and narrow, deeply bifid petal limbs. *Silene sveae* is named after the sponsor of the Chinese expedition during which this species was discovered, Svea Lindqvist. At present, it is known only from the type collection. *Silene sveae* belongs to the *S. nepalensis* group in section *Physolychnis* (Ruprecht) Bocquet. Despite the sparse material, the distinctive appearance of this plant leaves no doubt about specific rank. All three species have also been studied in cultivation, and *S. sveae* deviates from both the other species in producing only a leaf rosette the first year, whereas the other two species produce flowering stems.

Silene tubulosa Oxelman & Lidén, sp. nov. TYPE: China. Xizang [Tibet]: "Pangkar, Drubla Chu. On granite boulders in deep shade of birch forest. Corolla green. Alt. 11500 feet" [3600 m], 21 Aug. 1938, *F. Ludlow, G. Sherriff & G. Taylor 6877* (holotype, BM).

Herba perennis caespitosa caudice lignoso caulibus erectis vel adscentibus, glanduloso-hirsutis. Folia basalia longe petiolata, laminis ovatis, obtusis vel subacutis. Folia caulina lanceolata vel elliptica, quam basalia breviores. Inflorescentia irregularis, 1–10-flora, laxa. Calyx pallide viridis, campanulatus, deinde inflatus, nervis inconspicuis. Carpophorum dense lanuginosum, circa 2 mm longum. Petala oblonga, erecta, ut videtur sine limbis, tubum formantes. Stamina et styli (3) ex tubum petalorum prominente exserta.

Species valde peculiaris.

Herbs perennial. Rootstock short and sturdy, with a few robust roots, crowned by a few small, sterile leaf rosettes. Stems few, caespitose, erect to ascending, 15–25 cm, with a rather dense mixture of long, glandular hairs and some shorter, reflexed, eglandular hairs. Basal leaves long petiolate with leaf blade decurrent on petiole; petiole 1–4 cm; leaf blade suborbicular to narrowly ovate, 2–5 × 1–4 cm, glaucous and hairy abaxially, especially along

veins and margin, subglabrous adaxially, apex obtuse to subacute. Distal leaves shortly petiolate; leaf blade lanceolate to elliptic, 1–2 × 0.5–1 cm, apex acute. Inflorescence a lax, irregular, unequally branched, 1- to 10-flowered thyrse (as in *Silene* sect. *Odontopetalae* Schischkin ex Chowdhuri and *Physolychnis* (Bentham) Bocquet); cymules long stalked, 2–4 cm, 1(or 3)-flowered, with small, herbaceous, lanceolate bracts; pedicels 5–15 mm. Calyx pale green with indistinct veins, campanulate at first, soon becoming ± inflated and subglobose, sparsely to densely pubescent; teeth obtuse to subacute at apex. Androgynophore ca. 2 mm, densely woolly. Petals "hyaline greenish white" (*Ludlow, Sherriff & Taylor 6185*), ± straight and erect, together forming a short tube exserted from calyx by 1–3 mm, each petal oblong, narrowed toward hairy base, 9–10 mm, ca. 1.5 mm wide at apex, without distinct lamina, claw, or coronal scales; apex truncate, ± irregularly notched or sometimes bifid. Stamens and styles long exserted from petal tube by up to 5 mm. Filaments white; anthers dark brown. Styles 3, greenish white. Seeds unknown.

Silene tubulosa is not similar to any other species of *Silene*. The name alludes to the petals that together form a small tube protruding from the calyx.

Paratypes. CHINA. **Xizang [Tibet]:** "Kyabden, Nyang Chu. On grassy cliff ledges and steep hillsides. Plant viscid. Calyx pale green. Petals hyaline greenish white. Filaments white; anthers dark brown; ovary dark green; styles greenish white. Alt. 13000 feet" [4100 m], 23 Aug. 1938, *F. Ludlow, G. Sherriff & G. Taylor 6185* (BM). Without locality or date, *F. Kingdon Ward 6121* (E).

Silene tibetica Lidén & Oxelman, sp. nov. TYPE: China. Xizang [Tibet]: "near Shipkee La, 31° 40′ N, 78° 44′ E, 9672 feet" [2950 m], July–Aug. 1847, *MacLagan 633* (holotype, E).

Herba perennis breve glanduloso-hirsuta, caudice pluricephalo caulibus erectis vel adscendentibus et rosulis sterilibus. Folia basalia longepetiolata obovata. Folia caulina pauca, late ovata sessilia. Flores in thyrso densiusculis dispositi. Calyx late campanulatus, in fructu latissime apertus. Androgynophorum dense lanuginosum. Petala ex calyce exserta, profunde bifida, dentibus lateralibus instructa. Semina (immatura) dorso longe-papillosa.

Herbs perennial, probably with a densely branched rootstock crowned by dense remnants of dead leaves and cataphylls, shortly glandular hairy. Stems erect or ascending, 10–15 cm. Sterile rosette leaves with petiole 5–6 cm; leaf blade obovate, gradually narrowed into petiole, 3(–4) × 1.5–2 cm, apex subobtuse to acuminate. Cauline leaves in 2 pairs, sessile, broadly ovate, ca. 3.5 × 2.5 cm, apex acute. Inflorescence a dense thyrse consisting of a terminal dichasium and stalked lateral dichasia (stalks ca. 2 cm), each dichasium 3- to 5-flowered; bracts herbaceous, gradually narrowed toward apex, 6–12 × 2–3 mm; pedicels 3–4 mm, that of alar (apical, first) flower to 10 mm. Lateral (later) flowers in dichasium apparently functionally male (an extremely rare condition in *Silene*). Calyx broadly campanulate, 10–12 × ca. 5 mm, expanding to 10–13 mm wide at late anthesis, divided to ca. 1/3 into triangular teeth acute at apex. Androgynophore ca. 3 mm, densely woolly. Petal claws exserted from calyx by 1–2 mm, with rounded auricles; limb oblong, ca. 3 mm, deeply bifid, usually with 2 pairs of lateral teeth; coronal scales short, dentate. Stamens exserted. Styles 5, included or exserted. Seeds (immature) with long, spiny, dorsal papillae.

This species is not similar to any other species of *Silene* known to us. A peculiar feature of the holotype specimen is that only the alar (apical or first) flower is bisexual, whereas the other (later) flowers appear to be functionally male. Although gynomonoecy is a widespread phenomenon in *Silene*, andromonoecy is unknown (although one may encounter odd female sterile flowers occasionally in many taxa). *Silene tibetica* is possibly related to the *S. indica* Roxburgh ex Otth group, where both broad leaves and broad, open calyces occur. *Silene tibetica*, however, differs from previously known species in this group (which is in need of revision) in the short stems, very broad calyces, and in being apparently andromonoecious.

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